

Where is Perspective-Sensitivity Headed?

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1 How important is perspective?

- Perspective-sensitivity is a special type of context-sensitivity such that a grammatical perspective is made salient syntactically, semantically, and pragmatically.
 - A whole host of elements in natural language have been claimed to be perspective-sensitive, i.e, they require an *anchor* to orient to.
 - These include: predicates of personal taste, vague predicates, epistemic modals (embedded and matrix), evidentials (embedded and matrix), high adverbs, spatial expressions, *because* and *since* clauses, relative clauses, appositives, relative socio-cultural expressions, and anaphora (logophoric anaphors, exempt anaphors, long distance anaphors).
 - Depending on the evaluation of the grammatically encoded perspective of this anchor, the sentence containing such a heterogenous array of elements elements may be true or false.
- (1) Epistemic Modals (Stephenson 2007, MacFarlane 2011, Anand and Hacquard 2008)
- a. It might be raining.
 - b. Sam thinks it might be raining.
- (2) Predicates of Personal Taste (Lasersohn 2005, Stephenson 2007, a.o.)
- a. This rollercoaster is fun.
 - b. Sam thinks the rollercoaster is fun.
- (3) Embedded and unembedded Appositives (Harris and Potts 2009)
- a. The other day, she told me that we need to watch out for the mailman, a possible government spy.
 - b. The other day, she refused to talk with the mailman, a possible government spy.
- (4) Spatial expressions & Evidentials (Partee 1989, Oshima 2006, Bylinina et al. 2015)
- a. The man sitting on the left was a foreigner.
 - b. *daremo* [roshiago *hanashi-soo-na*] *otoko-o*
anybody [Russian-ACC speak-EVID.INF-COP] man-ACC
shootaishinakatta
invited.NEG
'Nobody invited a man who **they** / I thought might speak Russian.'
- Where does this point-of-view come from?

- The structural encoding of discourse participants, with non-trivial semantic consequences.

- Many different proposals of the (left) periphery have been formulated to represent perspective grammatically (cf. Ross 1970, Speas and Tenny 2003, Haegeman and Hill 2013; Hill 2013; Krifka 2013; Woods 2014; Wiltschko 2016, a.o.).
- Crucially, all of these are formulations of the **Speech Act** Layer, leading to a multitude of definitions of what a *speech act* is:

In this talk, I will argue that:

- Structural encoding of perspective is tied to finiteness; more concretely, to coordinates inside a finite clause.
- Co-indexation and contra-indexation patterns between these coordinates and those in the Speech Act domain can help explain some puzzling behavior of PSIs.
- Semantic computation mechanisms are directly correlated with the articulated syntax, leading to disambiguation of interpretations.

2 A Puzzle

- In Bangla (also known as Bengali; SOV, Indo-Aryan), depending on the syntactic position of the evidential, the flavor of evidentiality changes.

(5) Bhadra (2018a): (2,3)

a. *Mina amerika chol-e ja-cche naki?* INFERENCE
 mina America go-IMPV go-3P.PRES.PROG NAKI

‘(Given what I inferred) Mina is going away to America (is it true)?’

b. *Mina naki amerika chol-e ja-cche?* REPORTATIVE
 Mina NAKI America go-IMPV go-3P.PRES.PROG

‘(Given what I heard), Mina is going away to America (is it true)?’

- Interestingly, apart from the syntactic position correlation, a similar ambiguity in flavor of evidentiality can be found in some English high adverbs:

(6) Across the hallway, all of the rooms are dark, except for Ram’s.

- Q: Is anyone here?
- A: (Apparently) Ram (?apparently) is here (apparently).
- A: (Evidently) Ram (?evidently) is here (evidently).

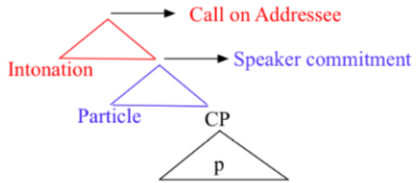


Figure 1: Heim et al. (2016)

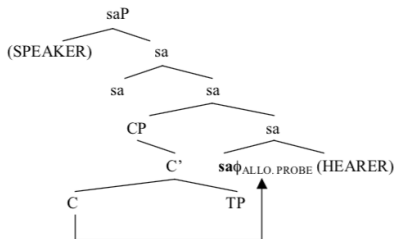


Figure 3: Miyagawa (2012)

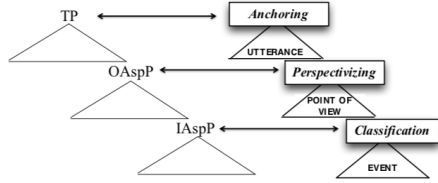


Figure 2: Wiltschko and Heim (2016)

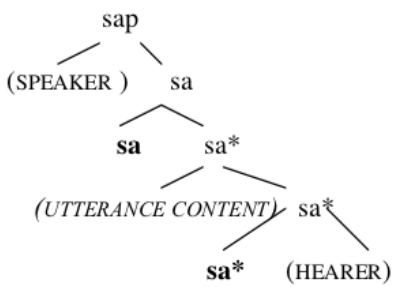


Figure 4: Speas and Tenny (2003)

- (7) Ram heard a rumor about Laxman at the party, and he is now relaying it to Sita.
- a. (Apparently) Laxman (apparently) didn't get into med school (apparently).
 - b. (Evidently) Laxman (evidently) didn't get into med school (evidently).
- This kind of ambiguity is due to the difference in the perspectival center of the PSIs.
 - The syntactic anchoring of perspective has crucial consequences that lead to a difference in the flavor of evidentiality.
- Ramchand (2014) was the first to suggest that the locus of deficiency in Bangla is not at T but higher up in the clause - namely, in Fin° (following Rizzi 1997).
 - Bianchi (2003) (as well as Adger 2007; Giorgi 2010) also relates finiteness to temporal anchoring.
 - Simplifying the details, a **finite verb has its own temporal encoding in relation to the speech time**, while a non-finite verb does not.
 - A non-finite tense is always connected to the temporal anchoring in the main clause (via adjunction or complementation).

(8) [Force [(Topic*) [(Focus) [+Fin^o (Speech Event S_e) [... Tense VP]]]]]]

3 Coordinates of a Finite Clause

3.1 Matrix and Embedded Speech Events

- Cross-linguistically, finite clauses have been argued to have the following characteristics: presence of independently referring overt subjects, opacity with respect to movements out of the clause, case-marking of the clausal subject (see McFadden and Sundaesan 2014 for a discussion).
 - Another important property has also been attributed to finite clauses - independent sentencehood status.
 - Nikolaeva (2007) describes the long standing view that non-finite verbs occur exclusively or predominantly in dependent contexts.
 - The many non-finite forms in Bangla (participles, gerunds, dependent conditionals, subjunctives, infinitives) have many syntactic differences, but none of them can stand alone as an independent utterance in the language, they are always dependent on the matrix tense (Ramchand 2014).
 - Even the subjunctive in Bangla, which behaves like a finite indicative clause as far as syntactic properties are concerned (Dasgupta 1996; Datta 2016), cannot have independent assertive force.
- The 'speech event' S_e is formulated as the *center of deixis*. Being able to encode its presence is the difference between a [+finite] Fin^o and a [-finite] Fin^o.
 - Bianchi draws on the literature on logophoricity to claim that speech events have **internal speakers** or **internal addressees** that logophoric pronouns in embedded clauses can take as antecedents. She defines a Logophoric Centre.
- (9) A **Logophoric Centre** is a speech or mental event which comprises (Bianchi 2003: 26):
- a. an *obligatory animate* participant (Speaker/Source)
 - b. an optional Addressee
 - c. a temporal coordinate
 - d. possibly spatial coordinates (for physical events) and is associated with a Cognitive State of the participants in which the proposition expressed by the clause must be integrated.
- Based on this formulation, Bianchi ties the ability of introducing a Logophoric Center to only the +finite head in the structure, to which the -finite heads are anaphorically related:

- (10) a. Finite clauses encode the **external Logophoric Center (eLC)** in [+finite] Fin^o.
 b. A [-finite] Fin^o encodes an **internal Logophoric Centre (iLC)**, whose participants are the participants of the matrix clause event (the eLC).

- Thus, external Logophoric Centers project **independent coordinates** of Speaker and (optional) Addressee which always correspond to the *actual participants* in the matrix speech event, i.e. the matrix subject and matrix object.
- Thus, what Bianchi calls ‘coordinates’ are **actual arguments of the matrix verb**, schematically represented as:

(11) Gianni_i asked₁ Maria_j [_iLC₁ Person_j to cook the dinner].

Coordinates of the speech event encoded by the matrix [+finite] Fin^o that the [-finite] Fin^o is anaphorically related to:

SPEAKER = Gianni = i

ADDRESSEE = Maria = j

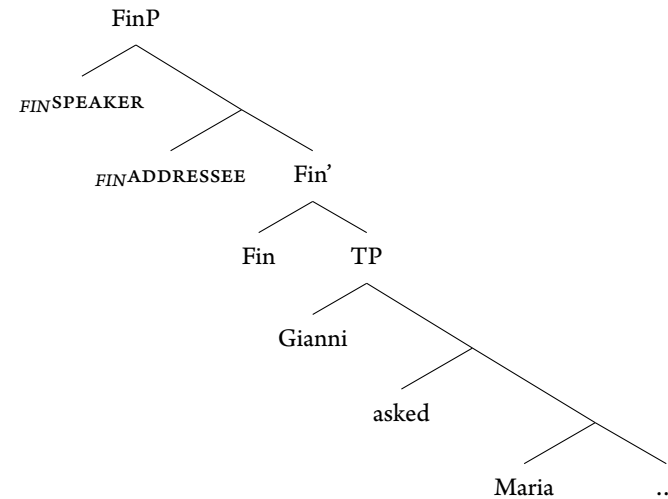
The iLC is co-indexed with the matrix verb, as per the formulation in (10b).

3.2 Proposal

- In addition to the two coordinates above, a [+finite] Fin^o also encodes two *other* coordinates, which are null coordinates of the *finite utterance* and not the event. (Bhadra 2017).
- This proposal is based on the crucial connection between clausal independence and *assertion* that has been argued for in many studies on properties of finiteness (Givón 1990; Anderson 1997; Klein 1998; Cristofaro 2007).
 - Only a finite clause can be independently asserted and that the major function of non-finiteness is signaling syntactic and semantic embedding.

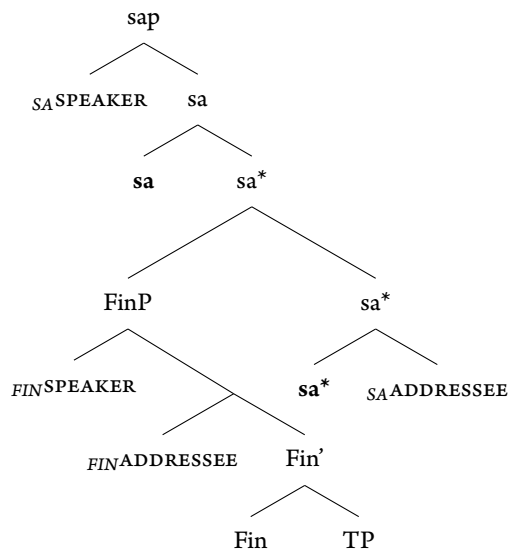
- The two null coordinates of a [+finite] Fin^o SPEAKER and ADDRESSEE of the finite clause: *FIN*SPEAKER, *FIN*ADDRESSEE.
- **They are not the arguments of the matrix verb.**

(12)



- [+finite] Fin^o's SPEAKER and ADDRESSEE are to be crucially kept separate from the Speech Act shells proposed in Speas and Tenny (2003).
 - Speas and Tenny propose that null DPs corresponding to SPEAKER, ADDRESSEE and SEAT OF KNOWLEDGE are generated in Larsonian shells in the speech act domain in all sentences of every language.
 - **These are not tied to events or finiteness in any way**

(13)



- The notation - $_{SA}SPEAKER$ and $_{SA}ADDRESSEE$ - refer to the Speas-Tennyian *speech act* coordinates.
- The notation - $_{FIN}SPEAKER$ and $_{FIN}ADDRESSEE$ - refer to the coordinates of the *finite clause*, as projected by $Fin\circ$.
- Making these distinctions between speech act participants and finite clause participants help us to make important distinctions:

(14) [Ram $_{[+finite]Fin}$ sang at the party yesterday]]

Speech Act: $_{SA}SPEAKER = \text{John}, _{SA}ADDRESSEE = \text{Mary}$
Finite clause: $_{FIN}SPEAKER = \text{John}, _{FIN}ADDRESSEE = \text{Mary}$

(15) [Ram reportedly $_{[+finite]Fin}$ sang at the party yesterday]]

Speech Act: $_{SA}SPEAKER = \text{John}, _{SA}ADDRESSEE = \text{Mary}$
Finite clause: $_{FIN}SPEAKER = \text{reporter} = \text{a third party (cannot be John$

¹Going into different possibilities of who the addressee might be is not very relevant here.

himself), $_{FIN}ADDRESSEE = \text{John}$ (could have been told directly or he could have overheard it).

(16) [Ram presumably $_{[+finite]Fin}$ sang at the party yesterday]]

Speech Act: $_{SA}SPEAKER = \text{John}, _{SA}ADDRESSEE = \text{Mary}$
Finite clause: $_{FIN}SPEAKER = \text{John}, _{FIN}ADDRESSEE = \text{Mary}$ ¹

- My proposal thus makes **finite clauses perspective-sensitive** because of the presence of these two extra coordinates.
- A syntactic way to think about perspective-sensitivity resulting from finite clauses introducing $_{FIN}SPEAKER$ and $_{FIN}ADDRESSEE$ operator-like elements is with respect to binding and agreement.
- Finite clauses with these operators should then be able to enable the following two scenarios:
 - In languages with attested indexical shift, indexicals inside a finite clause should be able to take $_{FIN}SPEAKER$ and $_{FIN}ADDRESSEE$ as antecedents.
 - Since $_{FIN}SPEAKER$ and $_{FIN}ADDRESSEE$ can themselves be controlled by higher operators, indexicals in their scope should be able to, by transitivity, be controlled by these higher operators without violating any locality principles.

- I will now show that both of these predictions are borne out. To illustrate (17a), I draw on the indexical shift and complementizer agreement literature, and to illustrate (17b), I discuss the presence of indexical shift across multiple embedded clauses cross-linguistically.

3.3 Motivating a P-S finite clause

3.3.1 Indexical Shift and Complementizer Agreement

- Shklovsky and Sudo (2014) demonstrate that indexical shift in Uyghur

(Turkic; North China and Kazakhstan) is crucially sensitive to the finiteness of the clause containing the indexicals.

- The phenomenon of indexical shift in Uyghur is confined to attitude report constructions.
- Uyghur attitude reports can appear in two syntactic forms - as a nominalized complement clause and as a finite complement clause.
- Although both forms are used to convey similar (synonymous) readings, 1P and 2P indexicals have to shift *only* when they appear in the finite complement clause constructions, and they are banned from shifting in the nominalized clauses.

(18) *Uyghur* (Shklovsky and Sudo 2014: 4a-b)

a. **nominalized complement**

Ahmet [mening kit-ken-lik-im-ni] di-di.
 Ahmet [1.SG.GEN leave-REL-NMLZ-1SG-ACC] say-PAST.3P

- ✓ (non-shifted) ‘Ahmet said that I_{speaker} left.’
- * (shifted) ‘Ahmet_i said that he_i left.’

b. **finite complement**

Ahmet [men ket-tim] di-di.
 Ahmet [1 leave-PAST.1SG] say-PAST.3P

- * (non-shifted) ‘Ahmet said that I_{speaker} left.’
- ✓ (shifted) ‘Ahmet_i said that he_i left.’

- The authors propose that a monstrous operator is syntactically present in Uyghur finite attitude report constructions, which is responsible for shifted interpretation of indexicals.
- Note that this proposal is compatible with the individual coordinates such as *FIN*SPEAKER or *FIN*ADDRESSEE being present to shift the reference of indexicals²

- The main claim here - that finite clauses project their own coordinates which are essentially ‘controllable’ by higher operators, is supported by the fascinating pattern in a language with complementizer agreement, Kipsigis (Nilotic; Kenya):

(19) *Kipsigis* (Diercks and Rao 2016: 31e)

a. *ko-i-mwaa-wɔɔɣ* *ɑ-lɛ-ndʒɔɔɣ* *ko-∅-it* *laɣok*
 PST-1SG-tell-2PL.OBJ 1SG-C-2SG PST-3-arrive children

‘I DID tell you (pl) that the children arrived.’

- Claim: the presence of the two operators - *FIN*SPEAKER and *FIN*ADDRESSEE - is what licenses both the affixes on the complementizer, i.e. reflexes of C agreeing with both of them.

3.3.2 Evidence from locality

- Baker (2008) offers a syntactic reformulation of the semantic accounts of indexical shift in Stechow (2003) and Schlenker (2004).
- Baker proposes the presence of two null arguments - S and A (as mnemonics for speaker and addressee) within the CP projection of all matrix clauses and certain embedded clauses.
- Vinokurova (2011) schematically represents the structural differences this system would assume between a non-shifting language like English and an indexical shift language like Slave (Anand and Nevins 2004):

(20) Vinokurova (2011): (8-9)

- a. **English:** [CP1 S_i, A_k [TP1 John_j told Mary_m [CP2 [TP2 I_{i/*j} like you_{k/*m}]]]]
- b. **Slave:** [CP1 S_i, A_k [TP1 John_j told Mary_m [CP2 S_j, A_m [TP2 I_j like you_m]]]]

²For example, see Anand and Nevins (2004), Deal (2013), among others, for arguments for individualized monstrous operators such as *OP*_{AUTH}, *OP*_{LOC}, etc.

- In (20b), the Speaker and Addressee in the embedded CP are controlled by John and Mary, and consequently the indexicals in the embedded clause are bound by them.
 - In the English counterpart in (20a), the embedded clause does not project the necessary coordinates and thus indexical shift is unavailable.
 - The non-trivial difference between Baker’s and the current proposal: in the **connection with finiteness**.
 - Baker (2008) assumes that selecting for a CP complement with S and A operators is a lexical property of a certain class of verbs (those predicates that cross-linguistically allow indexical shift), which would have to vary language by language.
 - The current proposal, which ties the presence of these operators to a [+finite] Fin° , would claim that all finite clauses have the same two operators but these operators differ in whether they are monstrous or not.
 - Thus, Bangla and Slave have the same operators yet the former does not have indexical shift while the latter does, owing to the monstrous nature of the latter’s operators.
 - This tie-up between finiteness and the presence of $FIN_{SPEAKER}$ and $FIN_{ADDRESSEE}$ coordinates is also strengthened by the cross-linguistically overwhelming preference of indexicals to shift in finite environments.
 - Deal (2017) draws the following generalization in light of the literature on indexical shift, most directly from the work of Sudo (2012) and Shklovsky and Sudo (2014):
- (21) *Finite Complements Only*
Indexical shift is restricted to finite complement clauses.
- Tsez (Caucasian; Russia) also permits indexical shift only in finite-clause embedding constructions, while non-finite forms such as clausal nominalizations only have the non-shifted reading:

(22) Tsez (Polinsky 2015: 33a-b)

a. $\check{z}oy\text{-}\check{a}$ $ne\check{t}o\text{-}qo\text{-}r$ $[babi\check{y}\text{-}\check{a}$ di
 lad-ERG DEM.nI-POSS-LAT father-ERG 1SG.ABS(.I)
 $\emptyset\text{-}egir\text{-}si=\lambda in]$ $esi\text{-}n$
 I-send-PST.WIT-QUOT tell-PST.WIT

- (i) ‘The youngster told her that the father had sent me’
 (ii) ‘The youngster_i told her that the father had sent him_i’

b. $\check{z}oy\text{-}\check{a}$ $ne\check{t}o\text{-}qo\text{-}r$ $[babi\check{y}\text{-}\check{a}$ di
 lad-ERG DEM.nI-POSS-LAT father-ERG 1SG.ABS(.I)
 $\emptyset\text{-}eg\check{a}\text{-}ru\text{-}hi]$ $esi\text{-}n$
 I-send-PST.PTCP-NMLZ tell-PST.WIT

- ‘The youngster told her that the father had sent me.’
 NOT: ‘The youngster_i told her that the father had sent him_i’

- Deal points out that similar alternations are reported in Slave (Rice 1986), Japanese (Sudo 2012), Turkish (Sener and Sener 2011, Özyildiz 2013), Navajo (Schauber 1979), and Korean (p.c. with Yangsook Park).
- All of the facts follows from the syntactic assumption that the operators that perform indexical shift belong to the finite C system.
- Another property of indexical shift, first described in Anand and Nevins (2004), is the Shift Together principle, in which all indexicals in the scope of a shifting operator shift their reference together.
- Syntactically, if every embedded (finite) clause contains $FIN_{SPEAKER}$ (and $FIN_{ADDRESSEE}$) that all have to be controlled by higher operators, then **even deeply embedded indexicals can participate in Shift Together**.
- I present data from the head-final, understudied, indexical shifting language Magahi (Indo-Aryan; India) below, demonstrating that violations of Shift Together are not permitted:

(23) *Magahi* (Deepak Alok, p.c)

- a. *Banti soch-kai ki [hum kah-liai ki [hum jai-bai]]*
 Banti think-PAST COMP I say-PAST that I go-FUT
 ‘Banti thought that Banti said that Banti will go.’
 ‘Banti thought that I_{speaker} said that I_{speaker} will go.’
 * ‘Banti thought that I_{speaker} said that Banti will go.’
 * ‘Banti thought that Banti said that I_{speaker} will go.’
- b. [_{SA}SPEAKER Banti thought that [_{FIN}SPEAKER I said that [_{FIN}SPEAKER I will go]]]
 ‘Banti thought that Banti said that Banti will go.’
- c. [_{SA}SPEAKER Banti thought that [_{FIN}SPEAKER I said that [_{FIN}SPEAKER I will go]]]
 ‘Banti thought that I_{speaker} said that I_{speaker} will go.’

- Anand and Nevins (2004) provide a similar example from Zazaki to demonstrate that the Shift Together constraint still holds even when the two items are not in a c-command relationship with each other:

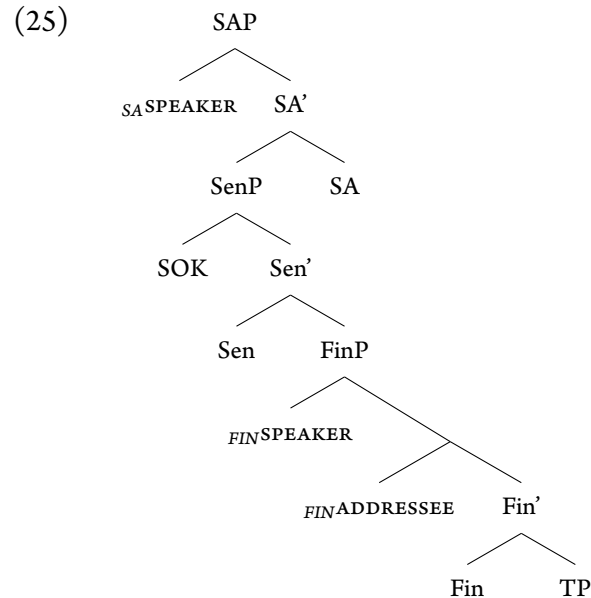
(24) *Zazaki* (Anand and Nevins 2004: 21)

- a. *Hesen va ke [pyaay ke mi-ra hes kene][pyaay ke mi-ra hes ne kene] ame zuja*
 Hesen said that [people like me.OBL like do][people that me.OBL NEG like do] came together
 ‘H. said that people that like me and the people that don’t like me met’
 ‘H. said that the people that like AUTHOR(U) and the people that don’t like AUTHOR(U) met’
 * ‘H. said that the people that like me and the people that don’t like AUTHOR(U) met’
 * ‘H. said that the people that like AUTHOR(U) and the people that don’t like me met’

Thus, this overall body of facts demonstrates that the predictions of the tying perspective-sensitivity to finiteness helps us posit coordinates that are controlling (binding) and controllable (bindable) operators inside finite clauses, explain a range of anchoring patterns.

4 Seat-of-Knowledge

- The anchors of PSIs exist in the structure as the syntactic representation of discourse participants.
- Apart from SPEAKER and ADDRESSEE, another sentient node - the SEAT OF KNOWLEDGE, has been argued to be present in the left periphery (Speas and Tenny 2003).³
- The SOK is a *sentient individual* in the syntactic spine, an individual whose point of view is reflected in the sentence.



³See Haegeman and Hill 2013, Hill 2013, Krifka 2013, Woods 2014, Wiltschko 2016 for alternate conceptions of the speech-act domain.

- This additional node - SEAT OF KNOWLEDGE - encodes perspective in this system, and can be co-indexed or contra-indexed with the SPEAKER.
 - Thus, there are three components in the speech act domain that play a crucial role⁴:
- (26) All of these elements can be co-indexed with each other, and the **latter two have to be co-indexed with an immediately higher element in order to establish co-reference.**
- a. $SA_{SPEAKER}$
 - b. SOK
 - c. $FIN_{SPEAKER}$
- The default is $SPEAKER_i = SOK_i$ (cf. Speas and Tenny 2003).
 - In a question, the ADDRESSEE is co-indexed with the SOK.⁵
 - This system crucially treats co-indexing to be a sort of *control*, which requires that the controller c-command the controllee.
 - Another productive pattern attested by Speas & Tenny is where the SOK has a disjoint reference from the other arguments in the Speech Act domain, thus conveying the point of view of someone other than the discourse participants.
 - This distinction will be important for us below.

(27) The controlled interaction among the peripheral perspectival elements in the speech act domain and the finite clause domain lead to the varying patterns of PSI anchoring.

5 Tackling the Puzzle

- One of the hallmark properties of *naki* is that it cannot ever appear in a clause-initial position. Some element needs to linearly precede it.

(28) **Naki Ram amerika chol-e ja-cche?*

NAKI Ram America go-IMPV go-3P.PRES.PROG

Intended: '(I hear/infer) Ram is going away to America, (is it true)?'

- There appears to be no syntactic or semantic restriction on what kinds of elements can precede *naki*. The preceding element can be of any syntactic category:

(29) a. [*O-r jonno*]_{PP} *naki amra konodin kichu ko-ri-ni*
 him-Gen for NAKI we ever anything do-1P-NEG

Lit. '(I hear) for him we have never done anything.'

b. [*Konodin*]_{AdvP} *naki amra o-r jonno kichu ko-ri-ni*
 ever NAKI we him-Gen for anything do-1P-NEG

Lit. '(I hear) never have we done anything for him.'

c. [*Amra*]_{DP} *naki konodin o-r jonno kichu ko-ri-ni*
 We NAKI ever him-Gen for anything do-1P-NEG

Lit. '(I hear) we never did anything for him.'

d. [*Amra je o-r biye-te jai-ni Seta*]_{CP} *naki o*
 We COMP him-GEN wedding-LOC go-NEG that NAKI he
sObai-ke bol-e bEray.
 everyone-ACC tell-IMPV goes

Lit. '(I hear) that we didn't attend his wedding he goes around telling everyone.'

- In addition, more than one constituent can precede *naki*:

⁴Abstracting away from ADDRESSEES at the moment.

⁵See Miyagawa 2012 for an analysis of allocutive agreement in Japanese and Basque, where the ADDRESSEE is controlled by a probe in a higher position inside the saP.

(30) In all the cases below, *naki* has the REPORTATIVE interpretation; the INFERENCE interpretation is *unavailable* in all these configurations.

a. *Ram naki Sita-ke kalke skul-e boi-Ta di-te*
 ram NAKI Sita-DAT yesterday school-LOC book-CL give-IMPV
bhul-e ge-chilo.
 forget-IMPV go-PAST.3P

‘Ram reportedly forgot to give Sita the book at school yesterday.’

- b. *Ram Sita-ke naki ...*
- c. *Ram Sita-ke kalke naki ...*
- d. *Ram Sita-ke kalke skul-e naki ...*
- e. *Ram Sita-ke kalke skul-e boi-Ta naki ...*
- f. *Ram Sita-ke kalke skul-e boi-Ta dite naki ...*
- g. **Ram Sita-ke kalke skul-e boi-Ta di-te bhul-e naki ge-chilo.*

• This distribution can be summed up as follows:

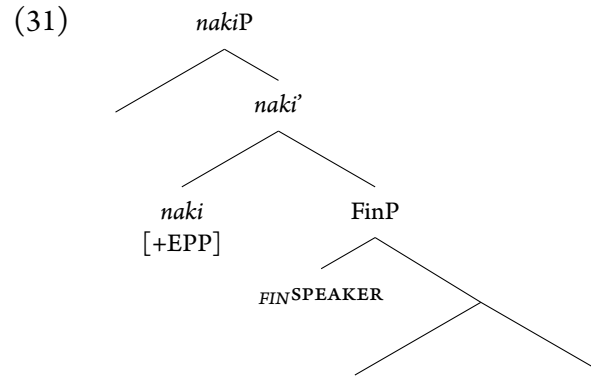
<i>naki</i>	Position
REPORTATIVE	any position inside a clause
INFERENCE	end of a clause

Table 1: Position-Interpretation Correlation

- This significant syntactic difference has prompted other studies on *naki* (Mukherjee 2008; Xu 2017) to assume that there are two lexical entries in the Bangla grammar, in spite of both entries belonging to the same grammatical category, having the exact same phonological form, as well as major semantic and pragmatic similarities.
- I will argue that *naki* is a single element in the Bangla grammar, which is generated in the same base position in both cases and the difference in evidential flavor crucially rests on the syntactic representation of a *judge*

argument (cf. Lasersohn 2005, Stephenson 2007) that *naki* has access to and composes with.

- The crucial question wrt the Position-Interpretation Correlation is - how does the syntactic position of the same particle effect a change in interpretation?
- **Claim:** *naki* is generated in the same position in both cases and does **not move**. The apparent differences in syntactic positions and consequent differences in interpretation come about due to the movement of other constituents around *naki* and other independent syntactic principles, such as the binding relations between operators in the Speech Act domain and inside finite clauses.
- *naki* is a head that takes a finite clause as a complement, and appears to the left of its complement as shown below:



- In arguing for this structure, I appeal to the case made in Bayer (1999) with regards to the ‘hybrid’ nature, i.e. mixed-headedness, of Bangla.
- Bayer argued that while languages display strong tendencies of being either head-final or head-initial, there are often exceptional projections that differ in their headedness.⁶

⁶Numerous other works, Van Riemsdijk (1990); Kayne (1994); Samiiian (1994) to name a few, argue for mixed-headedness in languages like Dutch, Hungarian, Persian, English, among others.

5.1 The High Periphery

5.1.1 High Topics

- I assume a [+EPP] feature on *naki*, given the ban on its clause-initial position, and the lack of any restrictions on the moved constituent(s).
- *naki*'s EPP requirement interacts in interesting ways with the co-indexation requirements of the elements above to yield the attested grammaticality patterns.
- Specifically, the closest EPP-goal for *naki* is always FinP. The question arises then - why do we not always get the order 'FinP *naki*' (the clause-final order)?
- I argue that this is because of the interaction of the configuration laid out above with two factors:
 - there is a higher probe in the structure (a high Topic^o)
 - the controllable elements in the structure have to be controlled by a controller immediately c-commanding them.
- I adopt Simpson and Bhattacharya (2003)'s insight, In arguing for the presence of the higher Topic probe.⁷
- Drawing evidence from *wh*/focus and the focus particle/complementizer *je*'s syntactic properties, they argue that the subject in Bangla *wh*-questions regularly occurs in a high clausal topic-like position, and the *wh*-landing site is located *under* this topic position:

(32) Simpson and Bhattacharya (2003): (28)

- a. *jon bOrder-e kal [kon boi-Ta]_i kinlo t_i*
 John Borders-LOC yesterday which book-CL bought
 'Which book did John buy yesterday at Borders?'

- Argument 1: Only referentially definite or specific elements occur as subjects preceding *wh*-phrases in the subject position.

(33) Simpson and Bhattacharya 2003: (34)

- a. *chele du-to [kon boi-Ta]_i porlo t_i* specific/definite subj
 boy two-CL which book-CL read
 'Which books did the two boys read?'
- b. **du-to chele [kon boi-Ta]_i porlo t_i* non-specific subj
 two-CL boy which book-CL read

- Argument 2: quantified subjects, which the authors argue frequently resist topicalization (34), can only appear to the right of the *wh*-phrase (35) and not to the left (36).

(34) *As for no one/everyone/only Mary, which book did he/they/she buy?

(35) Simpson and Bhattacharya (2003): (35)

- a. *ka-ke kew/Sudhu meri vot dEy-ni*
 who-DAT anyone/only Mary vote gave-NEG
 'Who did no one vote for?'
- b. *ka-ke Sudhu meri vot dEy-ni*
 who-DAT only Mary vote gave-NEG
 'Who did only Mary not vote for?'

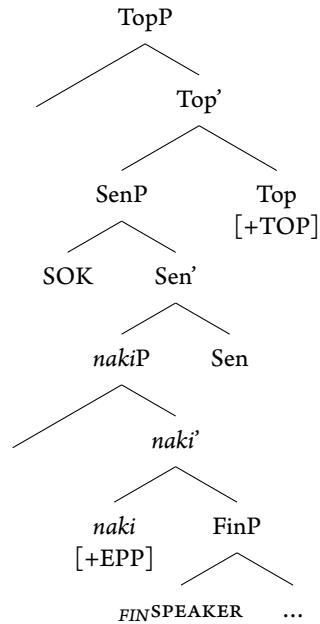
(36) a. **kew ka-ke vot dEy-ni*
 anyone who-DAT vote gave-NEG

- b. **Sudhu meri ka-ke vot dEy-ni*
 only Mary who-DAT vote gave-NEG

⁷Also see Hsu (2017) for a similar configurational claim for Old English, West Flemish, Kashmiri and Yiddish.

- I take the high Topic position that Simpson and Bhattacharya (2003) propose (38) for Bangla *wh*-questions to be generally available in the language, including in *naki*-constructions.

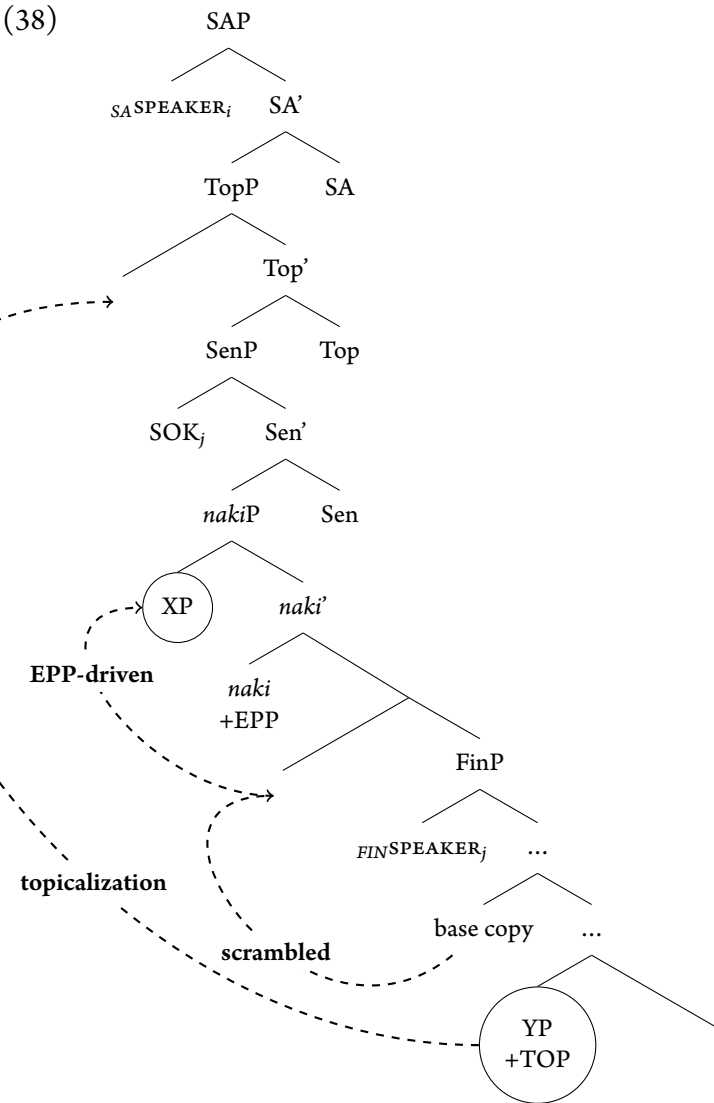
(37)



SOK controlled by $_{SA}SPEAKER$:-	SOK = $_{SA}SPEAKER$
SOK not controlled by $_{SA}SPEAKER$:-	SOK = third party; i.e. some REPORTER

Table 2: Indexation patterns of the SOK

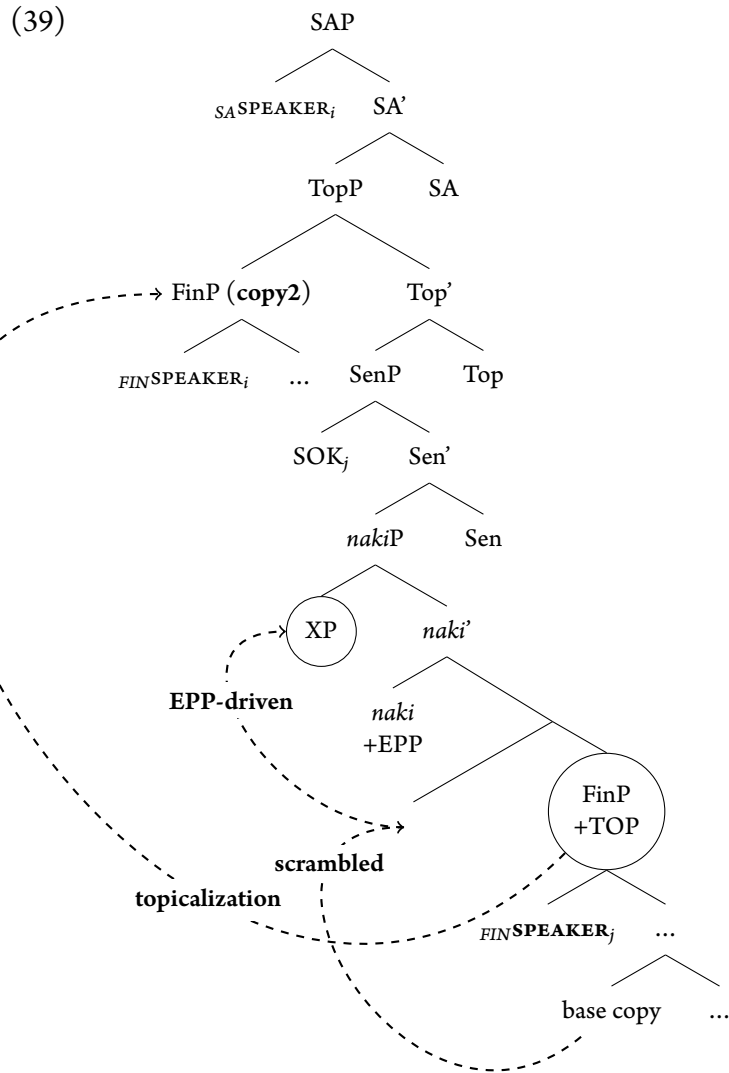
5.2 When $_{SA}SPEAKER$ and SOK are contra-indexed



- In (38), an XP (which could belong to any syntactic category) is scrambled from within the FinP and adjoined to it. This makes the XP the closest goal for *naki*'s EPP probe.
- After TOP is merged, (assuming that it attracts +TOP elements) it attracts some topical YP to its specifier. This results in the order $_{SA}SPEAKER_i$ YP SOK_j

XP *naki* FinP_{FIN SPEAKER_j} - the correct word order.

- We should discuss other logical possibilities, given this analysis. For example, what happens if the FinP itself is [+TOP]?



- In this configuration, an XP is scrambled from within the FinP and adjoined to it. This makes the XP the closest goal for *naki*'s EPP probe.
- Here, FinP is [+TOP]. After TOP is merged, it attracts the FinP. This results in multiple copies of FinP in the structure. The higher copy of _{FIN}SPEAKER is controlled by _{SA}SPEAKER_i, and the base copy by the contra-indexed SOK_j. Thus, the head and tail of the chain have different indices here.

- Assuming a strict reconstruction framework such as Fox (1999):

- A copy theory of movement, in which reconstruction is achieved via the (unrecoverable) deletion of the head of the chain and interpretation of the tail alone. This is schematically shown as follows:

(40) Fox (1999): (82)

a. QP₂ ... pronoun₁ ... QP₂ ... pronoun₁ ... QP₂

- This means that in the event that the head of the chain is non-identical to the chain, unrecoverable deletion of the offending copies is blocked, preventing reconstruction from taking place (Fox 1999: p. 189)

- This captures the observation that A-bar movement, under the copy theory of movement, can affect Condition C only if the R-expression is inside an adjunct (41a), and only if this adjunct is inserted *after* movement (41c). Fox illustrates this schematically in the following manner:

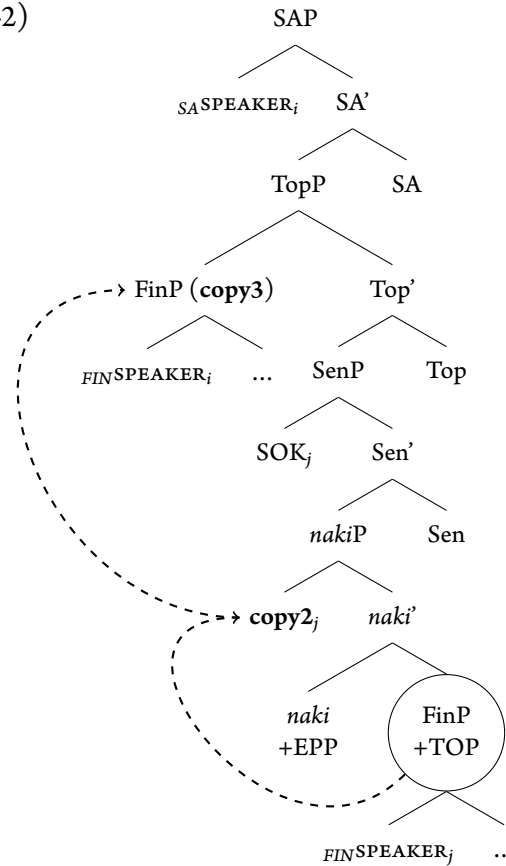
(41) Fox (1999): (80-81)

a. * [QP ... [complement ... R-expression₁ ...] ...]₂
 ... pronoun₁ ... [QP ... [complement ... R-expression₁ ...] ...]₂

b. * [QP ... [adjunct ... R-expression₁ ...] ...]₂
 ... pronoun₁ ... [QP ... [adjunct ... R-expression₁ ...] ...]₂
 (adjunct inserted before movement)

c. [QP ... [adjunct ... R-expression₁ ...] ...]₂
 ... pronoun₁ ... [QP ...]₂
 (adjunct inserted after movement)

- Early (before movement) insertion of the adjunct results in the head and tail of the chain being identical, and thus reconstruction proceeds smoothly. (42)



- If the adjunct is inserted *after* movement, then reconstruction (i.e. unrecoverable deletion of the adjunct) gets blocked because the head and tail of the chain are not identical anymore, preventing the adjunct from getting interpreted.

- The main idea: members of chains can be deleted only under identity with a copy and reconstruction rests on this identity relation holding between the two ends of a syntactic chain.

- In (39), unrecoverable deletion of the offending copies of FinP is blocked because of the the different indices on *FIN*SPEAKER, and the result is incoherent.

- In this configuration too, the exact same problem arises as in the previous case.
- FinP is [+TOP] and moves to [Spec, TopP] resulting in multiple copies of FinP in the structure.
- Given the non-identity of the copies, unrecoverable deletion and consequently, reconstruction, are blocked, resulting in an uninterpretable derivation.
- Note: these alternate structures demonstrate that no extra principles are stipulated here to govern the control and indexing relations between these syntactic elements - any indexation configuration is possible, and independent syntactic principles rule the undesirable derivations out.

5.3 When $_{SA}$ SPEAKER and SOK are co-indexed

- What forces *naki* to be clause-final when the $_{SA}$ SPEAKER and SOK are co-indexed?
- Reframing the question: **why does *naki* appear clause-finally only in the co-indexed configuration, and not in the contra-indexed configuration?**
- To answer this question, I draw on an insight from the work of Bhatt and Dayal (2017) on the Hindi polar Q particle *kyaa*.
- Note: One of the main here is that the indexation patterns of the relevant heads does not affect topicalization or other movements, but it affects reconstruction of moved elements. The co-indexed configuration is the only one that allows smooth reconstruction of perspectival chunks of structure, and hence gives rise to clause-final *naki*.

5.3.1 Whole clause topicalization

- Bhatt and Dayal (2017): *kyaa* is base-generated in the clause-initial position (inside ForceP), and other positions that the particle appears in (clause-medial, clause-final) are derived via topicalization of constituents from inside IP to above *kyaa*.

(43) Distribution of Hindi polar *kyaa* (Bhatt and Dayal (27, 36))

- a. (kyaa) *anu-ne* (kyaa) *uma-ko* (kyaa) *kitaab* (%kyaa)
 Q_{YN} Anu-ERG Q_{YN} Uma-ACC Q_{YN} book.FEM Q_{YN}
 [dii]↑
 give.PFV.FEM
 ‘Did Anu give a/the book to Uma?’
- b. Subject *kyaa* Object Verb
 ← [Subject_i [ForceP *kyaa* [CP₁ ____ C_o [Y/N][IP t_i ...]]]]
- c. Subject Object *kyaa* Verb
 ← [Subject_i Object_j [ForceP *kyaa* [CP₁ ____ C_o [Y/N][IP t_i t_j ...]]]]

- d. Subject Object Verb
 ← [ForceP TP_i *kyaa* [CP [Y/N] t_i]]

- The authors provide two diagnostics for testing the validity of this proposal: (i) favored continuations in gapping, and (ii) Y/N question congruence.

?hatt and Dayal assume that if any material precedes *kyaa*, that material is presupposed while material following *kyaa* is open for confirmation. Based on this assumption, it follows that pre-*kyaa* material cannot be contrasted. The authors test this hypothesis for all positions of *kyaa*; I only show clause-medial *kyaa*.

(44) *kyaa* follows the subject:

- a. [*ram-ne*_i [*kya* [t_i *Sita-ko* *kitaab* *dii*]]]
 ram-ERG $Q_{Y/N}$ Sita-ACC book gave
 ‘Did Ram give Sita the/a book?’
- b. # *yaa* *Mina-ne*
 or *Mina-ERG*
 ‘or did Mina?’
- c. *yaa* *Vina-ko*
 or *Vina-DAT*
 ‘or to Vina?’
- d. *yaa* *magazine*
 or *magazine*
 ‘or did he give Sita a magazine?’

- The other diagnostic is Y/N question congruence facts. This test predicts that, since only non-presupposed material may be negated/rejected, only material following *kyaa* should be able to be negated.⁸

⁸Again, I provide only their clause-medial *kyaa* paradigm below; see the original work for the exhaustive list of tests.

(45) [S [*kyaa* [IO DO V]]]

a. [*ram-ne_i [kya [t_i anu-ko kitaab dii]]]*
 ram-ERG Q_{Y/N} anu-ACC book gave

‘Did Ram give Anu the/a book?’

b. **nahī_i; Shyam-ne dii*
 NEG Shyam-ERG gave

Subject negated

‘No, it was Shyam.’

c. *nahī_i; Uma-ko dii*
 NEG Uma-DAT gave

IO negated

‘No, it was Uma (to whom Ram gave the book).’

d. *nahī_i; magazine dii*
 NEG magazine gave

DO negated

‘No, it was a magazine (that Ram gave to Anu).’

5.3.2 Topicalized FinP

- This analysis can be extended to the clause-final instantiation of the *naki*.
- Applying Bhatt and Dayal’s diagnostics to clause-final *naki* and *ki* constructions lead to expected results.

(46) Clause-final *kyaa* (Bhatt and Dayal 2017: 35)

a. *Anu-ne Uma-ko kitaab dii kyaa?*
 Anu-ERG Uma-DAT book.FEM give.PFV.FEM Q_{YN}

‘Did Anu give a/the book to Uma?’

(47) **Gapping continuation diagnostic:** pre-*kyaa* (Bhatt and Dayal 2017: 37) and pre-*naki* material cannot be contrasted.

a. Hindi *kyaa*

**Anu-ne Uma-ko kitaab dii kyaa yaa Mona-ne*
 Anu-ERG Uma-DAT book.FEM give.PFV.FEM Q_{YN} or Mona-ERG

Intended: ‘Did Anu give a/the book to Uma or was it Mona who gave a/the book to Uma?’

b. Bangla *naki*

**Anu Uma-ke boi-Ta diye-che naki na Mona?*
 Anu Uma-DAT book-CL give-PFV.3P NAKI NEG Mona

Intended: ‘(I infer) Anu give a/the book to Uma or it was Mona who gave a/the book to Uma, (is it true)?’

(48) **Y/N congruence diagnostic:** pre-*kyaa* (Bhatt and Dayal 2017: 38) and pre-*naki* material cannot be ‘corrected’ (i.e. denied/negated) in a Y/N question configuration. In response to (46) (and an identical question with *naki* in Bangla), the following cannot be felicitous answers.

a. #*nahī_i; Mina-ERG dii*
 NEG Mina-ERG give.PFV.FEM

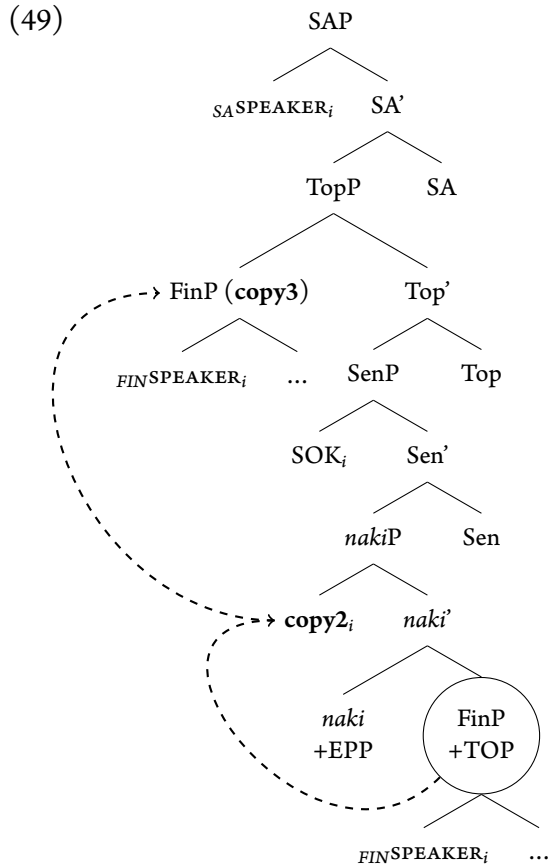
‘No, it was Mina who gave a/the book to Uma.’

b. #*Na, Mina diye-che*
 NEG Mina give-PERF.3P

‘No, it was Mina who gave the book to Uma.’

- Thus, we can defend the claim that *naki* surfaces clause-finally because its whole complement clause is topicalized.
- i.e. the whole finite clause complement of *naki* undergoes movement to the high TopP.
- We have already seen the consequences of such movement, in the *contra*-indexed _{SA}SPEAKER and SOK cases above (39, 42). Those derivations crashed because the topicalized FinPs could not be reconstructed, given the *contra*-indexation of the perspectival heads in the structure.

- What happens when the relevant perspectival heads are *co-indexed*? This is the **only configuration** in which the movement of FinP to [Spec, TopP] can be successful, i.e. can be reconstructed and interpreted. This is possible because the head and tail of the chain ends up with the same indexes:



- An unified analysis can be defended of the Bangla evidential *naki* which changes its evidential flavor based on its syntactic position relative to other phrases.
- It was argued to be generated in one single base position; the apparent surface differences in the syntactic distribution of the two evidential flavors were shown to fall out from independent syntactic principles relating to c-command

and control, binding, locality and reconstruction.

6 Consequences for Semantic Computation

6.1 The Judge argument

- Following Lewis (1979), Chierchia et al. (1989), Lasnik (2005), Stephenson (2007) invokes the notion of *doxastic alternatives*, but with a ‘judge’ restriction, in order to implement a core property of attitude predicates like *think* which obligatorily shift the judge parameter of an embedded clause to the matrix subject.

(50) $\text{Dox}_{w,t,x} = \{ \langle w', t', y \rangle : \text{it is compatible with what } x \text{ believes in } w \text{ at } t \text{ that he/she/it is } y \text{ in } w' \text{ at } t' \}$

- For epistemic modals, she introduces the notion of *epistemic alternatives*.
- This analysis can be extended to indirect evidentials as well, given the fact that coming to conclusions based on indirect evidence requires epistemic alternatives.

(51) $\text{Epist}_{w,t,x} = \{ \langle w', t', y \rangle : \text{it is compatible with what } x \text{ knows in } w \text{ at } t \text{ that he/she/it is } y \text{ in } w' \text{ at } t' \}$

- Since a person’s knowledge cannot rule out the fact that the actual individual is in the actual world and time at which they are located, the set of epistemic alternatives must always include the index of evaluation - $\langle w,t,x \rangle$ - itself.

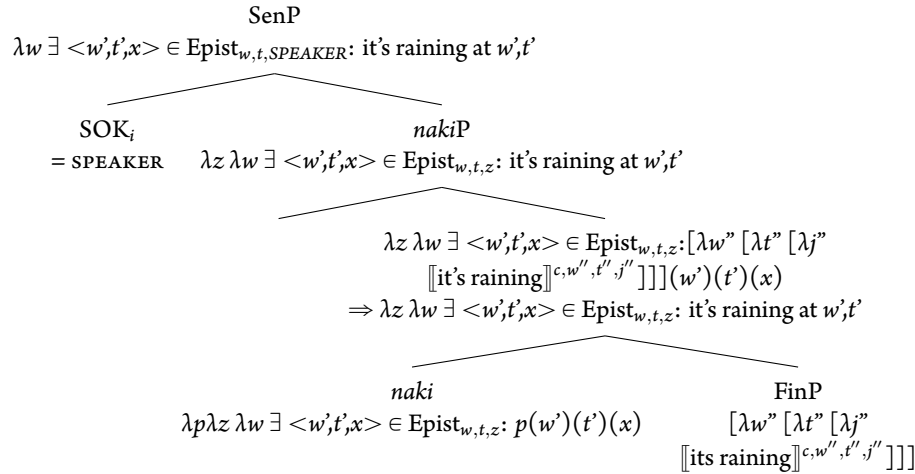
- I propose the following meaning for *naki*, an expression of type $\langle \langle \langle \langle s \langle i, et \rangle \rangle \rangle \rangle \rangle \langle e \rangle \langle s \rangle \langle t \rangle$ (Bhadra 2018b):

(52) $\llbracket naki \rrbracket^{c,w,t,j} = \lambda p_{\langle s \langle i, et \rangle \rangle} \lambda z_e \lambda w_s \exists \langle w', t', x \rangle \in \text{Epist}_{w,t,z} : p(w')(t')(x)$

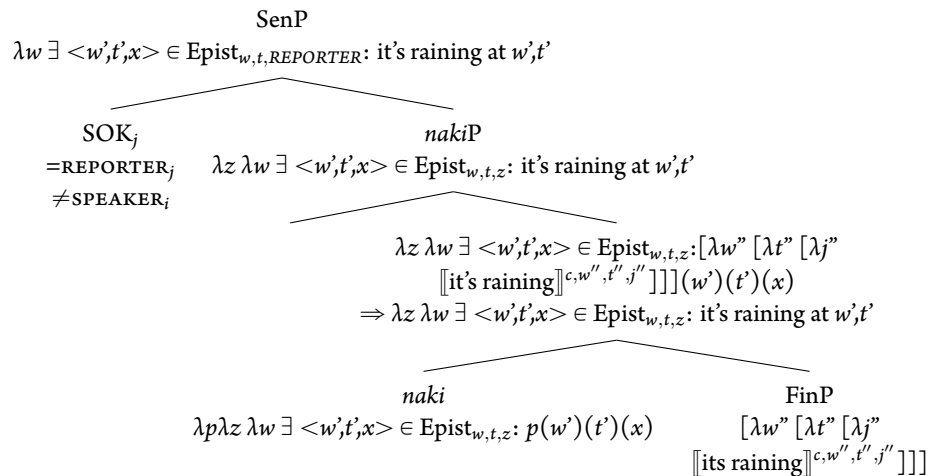
- This definition claims that *naki* a function that requires a proposition and a Lasnikian judge argument and returns a statement saying that there is at least one alternative in the judge’s epistemic domain in which the proposition holds.

(53) The SOK translates directly into the judge variable.

(54) INFERENCE interpretation



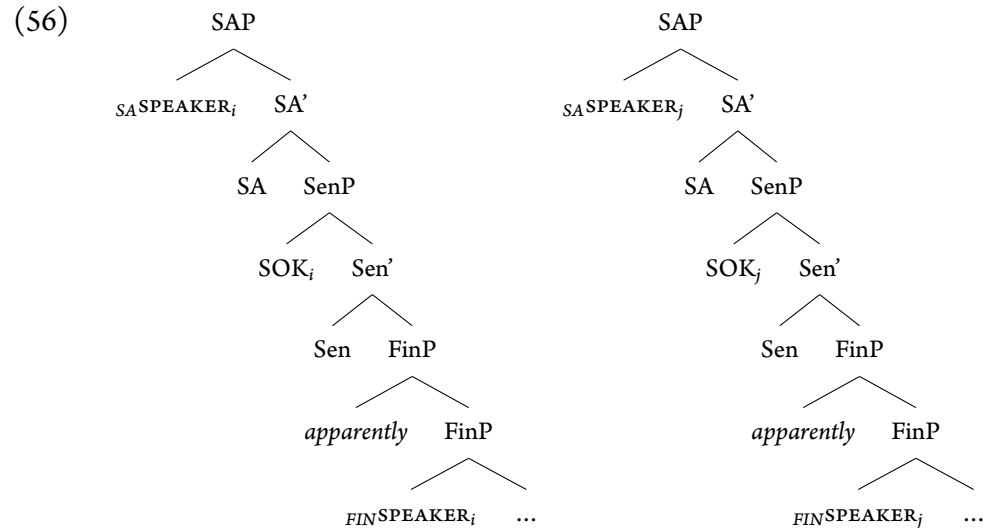
(55) REPORTATIVE interpretation



- Thus, an interface-oriented analysis helps us achieve a holistic picture of the phenomenon.

6.2 English

- Let us now see if this interface analysis can be applied to the English paradigms in (6) and (7) as well.



- Given the mostly rigid word order of languages like English, there is no special movement posited in order to get the differing interpretations.
- I.e. there is no Position-Interpretation Correlation in this paradigm.
- The crucial mechanisms of - (i) the PSI Merging over a perspective-sensitive finite clause, (ii) co- and contra-indexation of perspectival heads in the periphery, (iii) a strict correlation with the semantic computation - give us the right results.

Conclusion

So far, we have argued for:

- Connecting syntactic perspective to finiteness (drawing on empirical evidence from indexical shift, complementizer agreement, finite and non-finite anchoring).
- Syntactic perspective-sensitivity being the result of the interaction of control by speech-act heads in three different layers in the periphery.
- A direct semantic translation of this structural perspective-sensitivity in terms of a relativized judge argument: such that a PSI quantifies over the epistemic alternatives of this judge, determined by referential indexation patterns.

7 Non-configurational adjuncts

- Charnavel (2018) shows that in adjunct clauses like English *because* and *since* clauses, PSIs can be licensed:⁹

(57) Stephenson (2007) via Charnavel (2018)

- SPEAKER = j ; matrix subject = i
- Liz left the party because things **might** _{i,j} have spiraled out of control.
- Airplanes frighten John because they **might** _{i,j} crash.
- [The senator] _{i} decided to resign because an incriminating video of himself _{i} was leaked to the press.

(58) Some relevant terminology Charnavel (2018)

- A structural mnemonic: *A because B*
- Causal judge*: endorses the causal relation

c. *Attitude Holder*: endorses the content of the subordinate clause

	Causal judge	Attitude holder of B
Case #1a	speaker	speaker
*Case #1b	speaker	event participant in A (+ speaker)
*Case #1c	event participant in A	event participant in A (+ speaker)/ speaker ¹¹
Case #2	speaker + event participant in A	event participant in A
Case #3a	speaker + event participant in A	speaker + event participant in A
*Case #3b	speaker + event participant in A	speaker

Figure 5: Perspectival possibilities in *because*-clauses (Charnavel 2018: (44))

(59) When the event participant (matrix subject) in A behaves as an Attitude Holder of B, (s)he must also be the Causal Judge. (Case #1b)

- Liz _{i} left the party because there was an **embarrassing** picture of herself _{i} going around.
- #But she thinks that she left because she was tired.
- #But Liz thought there was no picture of herself going around.

(60) The event participant cannot be the only causal judge either in this case (Case #1c)

- Liz _{i} left the party because there was an embarrassing picture of herself _{i} going around.
- # But I think that she left because she was tired.
- I did not think the picture was embarrassing/I could see the picture was in fact of Anna.

⁹Also see Thráinsson 1976, Sells 1987, i.a. for these clauses licensing anaphors exempt from Condition A.

7.1 Bangla *because* clauses

- Bangla has two syntactic constructions corresponding to this kind of subordination:

(61) *A because B*

Sita bari chele chole ge-lo karon tar porer
 Sita house left go go-PERF.3P because after that-GEN
ghotona-gulo-r khub kharap porinoti hote paarto_{i,j}.
 incidents-CL-GEN very bad outcome happen can-PAST.3P.

‘Sita left the house because the later incidents could have spiraled out of control.’

(62) *because B, A*

Porer ghotona-gulo-r khub kharap porinoti hote paar-to_{i,j} bole Sita
bari chere chole ge-lo. incidents-CL-POSS very bad outcome happen
can-PAST.3P. QUOT Sita house left go go-PERF.3P

‘Because the later incidents could have spiraled out of control, Sita left the house.’

- Bangla displays some interesting differences with respect to possibilities of perspectival anchoring in the two structures:

(63) *Ram plane-e bosh-te bhoy paay karon ogulo kraesh kor-te*
 Ram plane-LOC sit-IMPV fear gets because those crash do-IMPV
paare_{i,j}
 can

‘Ram is scared to sit on a plane because they might/can crash.’

a. **Matrix subject need not be a Causal Judge:**

Kintu o bhabe je o ogulo-ke bhoy paay karon boshle-i
 but he thinks that he those-ACC fear gets because sit-COND-FOC
or bomi paay.
 his nausea gets

‘But he thinks that he fears them because he gets nauseous as soon as he sits in them.’

b. **The speaker has to be a Causal Judge:**

Kintu amar mon-e hoy je o ogulo-ke bhoy paay
 but mine mind-LOC happens that he those-ACC fear gets
karon boshlei or bomi paay.
 because sit-COND-FOC his nausea gets

‘But I think that he fears them because he gets nauseous as soon as he sits in them.’

c. **Both the speaker and the matrix subject have to be Attitude Holders:**

kintu o mon-e kore ogulo kraesh kor-te paare-na.
 but he mind-LOC does those crash do-IMPV can-NEG

‘But he thinks that they cannot crash.’

kintu amar mone hoy ogulo kraesh korte parena.
 but my mind-LOC happens those crash do-IMPV can-NEG

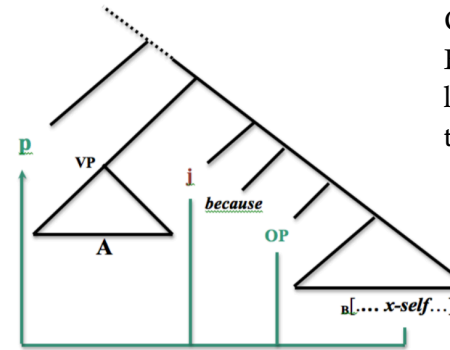
‘But I think they cannot crash.’

(64) *Plane kraesh kor-te paare_{i,j} bole Ram ogulo-ke bhoy paay.*
 plane crash do-IMPV can QUOT Ram those-ACC fear gets
 ‘Because planes might/can crash, Ram fears them.’

a. **It is weird (to some speakers) if the matrix subject is not a Causal Judge:**

% *Kintu o bhabe je o bhoy paay karon or ogulo-te*
 but he thinks that he fear gets because his those-LOC
bosh-le-i bomi paay.
 sit-COND-FOC nausea gets

'But he thinks that he fears them because he gets nauseous as soon as he sits in them.'



Charnavel (2018): (64)
 Binding of *j* by *P* is required for
 logophoric elements anteceded by *P*
 to appear in *B*

b. It is decidedly weird if the speaker is not a Causal Judge:

Kintu amar mon-e hoy or ogulo-te bosh-le-i
 but my mind-LOC happens his those-LOC sit-COND-FOC nausea
bomi paay bole o ogulo-ke bhoy paay.
 gets QUOT he those-ACC fear gets

'But I think he fears them because he gets nauseous as soon as he sits in them.'

c. Again, both the speaker and the matrix subject have to be Attitude Holders:

kintu o mon-e kore ogulo kraesh kor-te paare-na.
 but he mind-LOC does those crash do-IMPV can-NEG

'But he thinks that they cannot crash.'

kintu amar mone hoy ogulo kraesh korte parena.
 but my mind-LOC happens those crash do-IMPV can-NEG

'But I think they cannot crash.'

- The low attachment of *because*-clauses makes it possible for the causal judge to be in a position where it can be bound by the event participant in *A*.
- Charnavel's structure cannot unilaterally be applied to both structures in Bangla, given the differential (high and low) attachment sites of the adjunct clause.¹⁰
- One of the main assumptions of the structure is that the speaker can bind an element in the causal clause **past the event participant** - in which case, the event participant should be able to bind the said element. (Charnavel 2018: p. 21).
- But Bangla points us to the existence of a configuration where when both the speaker's and the event participant's perspective is salient (i.e. they are both A.H.s), only the speaker is required to be a Causal Judge.
- **This makes Cases #1b and #1c felicitously available in Bangla.**
- This property seems to hold across both head-final and head-initial causal clauses, raising many non-trivial structural questions about perspective-sensitivity of the clauses themselves, licensing of PSIs, c-command and control, and their correlations with interpretation.

¹⁰See Singh (1980), Bayer (1999), Bayer (2001), Bhattacharya (2000) for differing views on the syntax of *bole*-clauses as complement clauses; however, the causal life of *bole* has not been extensively studied.

References

- Adger, D. (2007). Three domains of finiteness: A minimalist perspective. *Finiteness: Theoretical and empirical foundations*, 23–58.
- Anand, P. and V. Hacquard (2008). Epistemics with attitude. In *Semantics and Linguistic Theory*, Volume 18, pp. 37–54.
- Anand, P. and A. Nevins (2004). Shifty Operators in Changing Contexts. In R. B. Young (Ed.), *Proceedings of {SALT XIV}*, Cornell University, Ithaca, NY, pp. 20–37. CLC Publications.
- Anderson, J. M. (1997). Finiteness and auxiliarihood. *From Runes to Romance. A Festschrift for Gunnar Persson on his Sixtieth Birthday*, 1–20.
- Baker, M. C. (2008). *The syntax of agreement and concord*, Volume 115. Cambridge University Press.
- Bayer, J. (1999). Final complementizers in hybrid languages. *Journal of Linguistics* 35(02), 233–271.
- Bayer, J. (2001). Two grammars in one: Sentential complements and complementizers in bengali and other south asian languages. In *Tokyo Symposium on South Asian Languages: Contact, Convergence and Typology*, pp. 11–36.
- Bhadra, D. (2017). *Evidentiality and Questions: Bangla at the Interfaces*. Ph. D. thesis, Rutgers University.
- Bhadra, D. (2018a). Evidentials are syntax-sensitive: the view from Bangla. *Glossa: a journal of general linguistics*.
- Bhadra, D. (2018b). Flipping evidentials, ms. Harvard University.
- Bhatt, R. and V. Dayal (2017, May). Polar Questions, Selection and Disjunction: Clues from Hindi-Urdu polar kya:.
- Bhattacharya, T. (2000). Peripheral and clause-internal complementizers in bangla: A case for remnant movement. In *Proceedings of WECOL*, Volume 12, pp. 1–14. Citeseer.
- Bianchi, V. (2003). On finiteness as logophoric anchoring. *Temps et point de vue/Tense and point of view*, 213–246.
- Bylinina, L., E. McCready, and Y. Sudo (2015). Notes on perspective-sensitivity. *DONVM SEMANTICVM*, 67.
- Charnavel, I. (2018). Perspectives in causal clauses. *Natural Language & Linguistic Theory, to appear*.
- Chierchia, G., B. H. Partee, and R. Turner (1989). *Properties, types and meaning*. Dordrecht ; Boston: Kluwer Academic Publishers.
- Cristofaro, S. (2007). Deconstructing categories: finiteness in a functional-typological perspective. *Nikolaeva (ed.) 2007*, 91–114.
- Dasgupta, P. (1996). Remarks on subjunctivity. *Papers on language in society (papers in memory of Prof. Srivastava)*.
- Datta, M. (2016). *The Bangla Subjunctive*. Ph. D. thesis, Delhi University.
- Deal, A. R. (2013). Nez perce embedded indexicals. *Proceedings of SULA 7*.
- Deal, A. R. (2017). Shifty asymmetries: universals and variation in shifty indexicality.
- Diercks, M. and M. Rao (2016). Upward oriented complementizer agreement in kipsigis.
- Fox, D. (1999). Reconstruction, binding theory, and the interpretation of chains. *Linguistic Inquiry* 30(2), 157–196.
- Giorgi, A. (2010). *About the speaker: Towards a syntax of indexicality*. Number 28. Oxford University Press.
- Givón, T. (1990). *Syntax: A Functional-Typological Introduction*, Volume 1. Amsterdam: John Benjamins.
- Haegeman, L. and V. Hill (2013). The syntacticization of discourse. *Syntax and its limits*, 370–390.
- Harris, J. A. and C. Potts (2009). Perspective-shifting with appositives and expressives. *Linguistics and Philosophy* 32(6), 523–552.

- Heim, J., H. Keupdjio, Z. W.-M. Lam, A. Osa-Gómez, S. Thoma, and M. Wiltschko (2016). Intonation and particles as speech act modifiers: A syntactic analysis. *Studies in Chinese Linguistics* 37(2), 109–129.
- Hill, V. (2013). *Vocatives: How syntax meets with pragmatics*. Brill.
- Hsu, B. (2017). Verb second and its deviations: An argument for feature scattering in the left periphery. *Glossa: a journal of general linguistics* 2(1).
- Kayne, R. S. (1994). *The Antisymmetry of Syntax*. Cambridge, Massachusetts: MIT Press.
- Klein, W. (1998). Assertion and finiteness. In *Issues in the theory of language acquisition: Essays in honor of Jürgen Weissenborn*, pp. 225–245. Peter Lang.
- Krifka, M. (2013). Response particles as propositional anaphors. In *Semantics and Linguistic Theory*, Volume 23, pp. 1–18.
- Laserson, P. (2005). Context dependence, disagreement, and predicates of personal taste. *Linguistics and philosophy* 28(6), 643–686.
- Lewis, D. (1979). Scorekeeping in a language game. In R. Bäuerle, U. Egli, and A. von Stechow (Eds.), *Semantics from a Different Point of View*. Berlin: Springer.
- MacFarlane, J. (2011). Are assessment-sensitive. *Epistemic modality*, 144.
- McFadden, T. and S. Sundaresan (2014). Finiteness in south asian languages: an introduction. *Natural Language & Linguistic Theory* 32(1), 1–27.
- Miyagawa, S. (2012). Agreements that occur mainly in main clauses. *Main clause phenomena: New horizons* 190, 79.
- Mukherjee, A. (2008). Evidentiality: The Case of Bangla 'Naki'. Master's thesis, Jawaharlal Nehru University, New Delhi, India.
- Nikolaeva, I. (2007). *Finiteness: Theoretical and empirical foundations*. Oxford University Press.
- Oshima, D. Y. (2006). *Perspectives in reported discourse*. Ph. D. thesis, Stanford University.
- Özyildiz, D. (2013). When i is not me: A preliminary case study of shifted indexicals in turkish. *Unpublished manuscript, ENS*.
- Partee, B. (1989). Binding implicit variables in quantified contexts.
- Polinsky, M. (2015). Embedded finite complements, indexical shift, and binding in tsez. *Languages of the Caucasus* 1(1).
- Ramchand, G. (2014). Deriving variable linearization. *Natural Language & Linguistic Theory* 32(1), 263–282.
- Rice, K. (1986). Some remarks on direct and indirect discourse in slave (northern athapaskan). *Direct and indirect speech* 31, 47.
- Rizzi, L. (1997). The fine structure of the left periphery. In L. Haegeman (Ed.), *Elements of grammar*, pp. 281–337. Dordrecht: Kluwer Academic Publishers.
- Ross, J. R. (1970). On declarative sentences. *Readings in English transformational grammar* 222, 272.
- Samiian, V. (1994). The ezafe construction: Some implications for the theory of x-bar syntax. *Persian Studies in North America*, 17–41.
- Schauber, E. (1979). *The syntax and semantics of questions in Navajo*, Volume 20. Garland Pub.
- Schlenker, P. (2004). Person and {B}inding: A Partial Survey. *Italian Journal of Linguistics* 16(1), 155–218.
- Shklovsky, K. and Y. Sudo (2014). The syntax of monsters. *Linguistic Inquiry*.
- Simpson, A. and T. Bhattacharya (2003). Obligatory overt wh-movement in a wh-in-situ language. *Linguistic Inquiry* 34(1), 127–142.
- Singh, U. N. (1980). Bole an unresolved problem in bengali syntax. *Indian Linguistics* 41(1), 188–195.
- Speas, P. and C. Tenny (2003). Configurational properties of point of view roles. *Asymmetry in Grammar* 1, 315—345.

- Stechow, A. v. (2003). Feature deletion under semantic binding: Tense, person, and mood under verbal quantifiers. In *Proceedings of NELS*, Volume 33, pp. 379–404.
- Stephenson, T. (2007). Judge dependence, epistemic modals, and predicates of personal taste. *Linguistics and Philosophy* 30(4), 487–525.
- Sudo, Y. (2012). *On the Semantics of Phi Features on Pronouns*. Ph. D. thesis, MIT, Cambridge, Massachusetts.
- Van Riemsdijk, H. (1990). Functional prepositions. *Unity in Diversity*, edited by H. Pinkster and I. Gene, 229–241.
- Vinokurova, N. (2011). Shifting indexicals in sakha. In *Proceedings of the 10th Seoul International Altaistic Conference*, Seoul, South Korea. Altaic Society of Korea.
- Wiltschko, M. (2016). Ergative constellations in the structure of speech acts.
- Wiltschko, M. and J. Heim (2016). The syntax of confirmationals. *Outside the Clause: Form and function of extra-clausal constituents* 178, 305.
- Woods, R. (2014). The syntax of orientation shifting: Evidence from english high adverbs. In *ConSOLE XXII: Proceedings of the 22nd Conference of the Student Organization of Linguistics in Europe (8-10 January 2014, Lisbon)*., Volume 22, pp. 205–230.
- Xu, B. (2017). *Question bias and biased question words in Mandarin, German and Bangla*. Ph. D. thesis, Rutgers University.